

Bow, New Hampshire  
Article XVIII: Aquifer Protection Regulations  
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Zoning Ordinance

## ARTICLE XVIII: AQUIFER PROTECTION REGULATIONS

### 18.01 PURPOSE

The Town has determined that:

- (a) the groundwater underlying this Town is the sole source of its future drinking water supply.
- (b) the groundwater aquifers are integrally connected with, and flow into, the surface waters, lakes, and streams which constitute significant recreational and economic resources of the Town.

spills and discharges of petroleum products and other toxic and hazardous materials and discharge of sewage have repeatedly threatened the quality of such groundwater supplies and related water resources throughout New Hampshire and elsewhere, posing potential public health and safety hazards and threatening economic losses to the affected communities.

Therefore, the Town has enacted this ordinance in order to:

- (d) preserve and maintain the existing and potential groundwater supplies, aquifers, and groundwater recharge areas of the Town, and protect them from adverse development or land-use practices.
- (e) preserve and protect present and potential sources of drinking water supply for the public health and safety.
- (f) conserve the natural resources of the Town.

### 18.02 SPECIAL DEFINITIONS:

#### 18.02.01 Aquifer:

Geologic formation composed of rock or sand and gravel that contains significant amounts of potentially recoverable potable water.

#### 18.02.02 Aquifer Protection District or District:

The designated primary recharge areas lying westerly of N.H. Route 3A are shown in Figure 3.1 "Unconsolidated Aquifers and Recharge Areas" and the primary exploration areas lying easterly of N.H. Route 3A are shown in Figure 5.2 "Unconsolidated Aquifers and Primary Exploration Areas", both of which are contained in the SEA Consultants Inc. report of December, 1987 entitled "Aquifer Evaluation Investigation and Development of Groundwater Protection Program, Bow, New Hampshire". This report and Figures 3.1 and 5.2 are adopted as part of this ordinance and the report and addenda are on file at the Bow Town Hall.

#### 18.02.03 Area of Influence:

The area which experiences drawdown by a pumping well as plotted on a two-dimensional map surface; usually ellipsoidal in shape.

#### 18.02.04

##### Cone of Depression:

A three-dimensional conical concavity produced in a water table by a pumping well.

#### 18.02.05

##### Discharge:

The accidental spilling, leaking, pumping, pouring, emitting, emptying, or dumping of toxic or hazardous materials upon or into any land or waters in the Town of Bow. Discharge includes, without limitations, leakage of such materials from failed or discarded containers or storage systems, and disposal of such materials into any on-site sewage disposal system, dry well, catch basin, or unapproved landfill.

#### 18.02.06

##### Groundwater:

All the water found beneath the surface of the ground. In this ordinance, the term refers to the slowly moving subsurface water present in aquifers and recharge areas.

#### 18.02.07

##### Impervious Surface:

Material placed by man that does not allow surface water to penetrate into the soil.

#### 18.02.08

##### Leachable Waste:

Waste materials including solid wastes, sludge, and agricultural wastes that are capable of releasing water-borne contaminants to the surrounding environment.

#### 18.02.09

##### Mining of Land:

The removal of geologic materials such as topsoil, sand, gravel, or bedrock.

#### 18.02.10

#### Primary Recharge Areas:

Areas that collect precipitation or surface water and transmit it into the cone of depression of existing or potential water supply wells. Primary recharge areas are mapped unconsolidated aquifer areas surrounding existing or potential water supply well sites.

#### 18.02.11 Sanitary Waste:

Wastewaters arising from ordinary domestic water use as from toilets, sinks, bathing facilities, etc., and containing such concentrations and types of pollutants as to be considered normal wastes.

#### 18.02.12

##### Structure:

Anything constructed or erected, except a boundary wall or fence, the use of which requires location on the ground or attachment to something on the ground. For the purposes of this ordinance, buildings are structures.

#### 18.02.13

##### Solid Waste:

Useless, unwanted, or discarded solid material with insufficient liquid content to be free-flowing. This includes, but is not limited to, rubbish, garbage, scrap materials, junk, refuse, inert fill material, and landscape refuse.

#### 18.02.14

##### Toxic or Hazardous Materials:

Any substance or mixture of such physical, chemical or infectious characteristics as to pose a significant, actual or potential hazard to water supplies, or other hazard to human health, if such substance or mixture were discharged to land or waters of this Town.

Toxic or hazardous materials include, without limitation, organic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalies, and include products such as pesticides, herbicides, solvents and thinners. Waste generated by the following activities, without limitation, are presumed to be toxic or hazardous unless and except to the extent that anyone engaging in such an activity can demonstrate the contrary to the satisfaction of the Planning Board after it has provided the Bow Water Committee with opportunity for comment:

(a) Airplane, boat and motor vehicle service and repair;

(b) Chemical and bacteriological laboratory operation;

Cabinet making;

(d) Dry Cleaning;

(e) Electronic circuit assembly;

- (f) Metal plating, finishing and polishing;
- (g) Motor and machinery service and assembly;
- (h) Painting, wood preserving and furniture stripping;
- (I) Pesticide and herbicide application;
- (j) Photographic processing;
- (k) Printing.

#### 18.03 USE REGULATIONS:

##### 18.03.01

Prohibited Uses: Within the Aquifer Protection District the following uses are specifically prohibited:

- (a) Sanitary landfills, disposal of solid wastes other than brush and stumps, and disposal of brush and stumps in accordance with all laws by burial with less than four  
(4) feet of clearance above the observed maximum water table.
- (b) Stockpiles of road salt or other ice-control chemicals in quantities greater than 200 pounds dry weight, unless storage is under cover. This includes all mixtures of sand and salt.

Dumping of snow from outside the district.

- (d) Dry cleaning establishments and self service laundries.
- (e) Painting, wood-preserving, or stripping paint on a commercial scale.
- (f) Chemical or bacteriological laboratories.
- (g) Commercial establishments for printing, photocopying, or photographic processing.
- (h) Storage of herbicides, pesticides, fertilizers, or fungicides in amounts greater than 50 gallons or 250 pounds dry weight for retail distribution.
- (1) Underground storage tanks for petroleum products or any toxic or hazardous substance.
- (j) Golf courses.
- (k) Sewage treatment plants other than municipal.

(1) Commercial establishments or municipal facilities for the washing, servicing, painting, or repair of airplanes, boats or motor vehicles.

(m) Any other use which involves as principal activity the manufacture, storage, use, transportation, or disposal of toxic or hazardous material, except as allowed by special permit below.

18.03.02 Special Permit Uses: Within the Aquifer Protection District the following uses are allowed only by special permit:

(a) Municipal sewage treatment plants with on-site disposal of primary and/or secondary effluent discharge.

(b) Commercial earth removal and mining of land for on-site and/or off-site use, provided that the materials are not removed closer than four (4) feet to the observed maximum water table, unless the applicant demonstrates to the satisfaction of the Planning Board that the excavation will not adversely affect water quality. This use will be subject to R.A. 155:E and its amendments in the future.

Any use involving the alteration of greater than 50 (fifty) percent of the lot from the natural state.

(d) Any use with the exception of retail distribution which involves as an accessory activity the storage, use, or transportation of pesticides, herbicides, fungicides, or fertilizers, not including ordinary household use.

(e) Any portions of a residential development.

18.03.03 Permitted Uses: Within the Aquifer Protection District the following uses are specifically permitted, provided that the density regulations in Section 18.04 have been met and all other necessary permits, orders, or approvals required by local, state, or federal law have been obtained:

(a) All ordinary and customary uses associated with maintenance and upkeep of buildings and grounds provided there is no increase in impermeable surface area. Refer to Section 6.02 of this ordinance for percent coverage allowed by zone.

(b) Necessary public utilities and/or facilities designed so as to prevent contamination of groundwater.

Agricultural uses: pasture, light grazing, hay, gardening, nursery, conservation, forestry,

and other harvesting.

(d) Proper operation and maintenance of existing water bodies and dams, splash boards, and other water control, supply, and conservation devices.

(e) Single family residential development.

#### 18.04 DENSITY AND LOT COVERAGE REGULATIONS:

In the Aquifer Protection District:

##### 18.04.01

The impervious portion of a lot shall not exceed the allowable percent of area coverage expressed in the Table of Dimensional Standards, Section 6.02 of this ordinance.

##### 18.04.02

No division of an existing parcel of land shall produce a parcel which violates the standards of this ordinance.

18.04.03 The density of design gallons per day of sewage disposal shall not exceed N.H. Water Supply and Pollution Control Standards.

#### 18.05 SPECIAL PERMITS within THE AQUIFER PROTECTION DISTRICT:

##### 18.05.01

Planning Board Granting Authority: The Planning Board shall have the authority to issue a special permit for the uses listed in 18.03.02 if the Planning Board determines that the requirements of this Section 18.05 have been met. In making such determinations, the Planning Board shall give consideration to the simplicity, reliability and feasibility of the control measures proposed and the degree of threat to water quality which would result if the control measures failed.

The special permit shall be in writing.

##### 18.05.02

Materials to be Submitted by Applicants: To apply for a special permit, an applicant shall at a minimum provide the following materials to the Planning Board in such quantities as the Planning Board shall require:

(a) A site plan showing existing and proposed structures and the location of all facilities relevant to the other requirements specified in Paragraphs b, c, and d below.

(b) A complete list of all chemicals, pesticides, fuels, and other potentially toxic or hazardous materials to be used, generated, stored, or disposed of on the premises.

A description of proposed measures to protect all storage containers or facilities associated with such materials from vandalism, accidental damage, corrosion, and leakage. Such measures might include secure storage areas, shelters for corrodible or water soluble materials, spill control provisions around transfer points, and schedule of future monitoring of waste streams or groundwater on the site to ensure that proper control has been maintained.

(d) Projections of concentrations of nitrogen and other relevant solutes in the groundwater at the down gradient boundary of the property and at any other locations deemed pertinent by the Planning Board, including down gradient drinking water wells identified by construction of flow lines from the proposed site. Such projections shall be based upon appropriate groundwater models and information supplied by a registered professional engineer, hydrogeologist, hydrologist, or geologist.

(e) Such information as is needed to show compliance with the requirements of Section 18.07.

(f) Such other information as the Planning Board may require by regulation or otherwise to properly review the application.

18.05.03 Review by Other Town Agencies: Upon receipt of an application for a special permit, the Planning Board shall transmit one (1) copy to each of the Water Commission, the Conservation Commission, the Town Manager and Building Inspector for written comment. Failure by any of these agencies or persons to return written comments to the Planning Board within thirty-five (35) days shall indicate approval or no desire to comment.

18.05.04 Public Hearing: Before acting on an application for a special permit the Planning Board shall hold a public hearing on the application after notice in accordance with R.A. 676:4.

18.05.05 Parcels at the Boundary of the District: If new data on local hydrogeology and topography, acceptable to the Planning Board, would lead to a different location of the boundary, the Planning Board shall, by special permit, deem said boundary location to be the correct legal boundary for purposes of this section. Upon request of an applicant, the Planning Board may engage a registered professional engineer or hydrogeologist to conduct such a boundary-analysis and shall charge the applicant for the cost thereof, or in the alternative the applicant may hire and pay an engineer or hydrogeologist acceptable to the Planning Board to conduct such analysis.

18.05.06 The Planning Board may grant a special permit if it finds by written decision that the proposed use:

(a) meets the intent of this section as well as its specific criteria;

(b) will not, during construction or thereafter, have an adverse impact on any aquifer or recharge area in the District; and

will not adversely affect an existing or potential domestic or municipal water supply; and is consistent with existing and probable future development of surrounding areas.

(d) Groundwater quality in the district and at the down gradient boundary of the property will not violate State or Federal drinking water standards

(e) In addition to the findings described in (a), above, the decision shall include an explanation of any variation from the recommendations received from the agencies or individuals described in 18.05.03.

(f) Where a project also requires approvals by State agencies, the special permit shall include a condition that no building permits shall be issued until evidence has been received by the Planning Board that such approvals have been issued.



## 18.06 TREATMENT OF PRE-EXISTING NON-CONFORMING USES:

18.06.01 Structures and uses existing or shown on an approved site plan or described in an outstanding valid building permit as of January 6, 1990 may be constructed or continued provided that the building permit and any extensions of it have not expired and such use shall not be expanded to encroach further upon the Aquifer Protection District, except as provided in this ordinance.

18.06.02 With respect to underground storage tanks for petroleum products or other toxic or hazardous substances, the provisions of this section shall become applicable whenever such a tank becomes subject to replacement because of provisions under any law other than this section.

## 18.07 DESIGN AND OPERATIONS CRITERIA:

The following design and operation criteria shall be observed within the Aquifer Protection District:

18.07.01 Safeguards: Provision shall be made to protect against toxic or hazardous materials discharge or loss resulting from corrosion, accidental damage, spillage, or vandalism through measures such as: prohibition of underground fuel storage tanks; spill control provisions in the vicinity of chemical or fuel delivery points; secured storage areas for toxic or hazardous materials; and indoor storage provisions for corrodible or dissolvable materials. For operations which allow the evaporation of toxic or hazardous materials into the interiors of any structures, a closed vapor recovery system shall be provided for each such structure to prevent discharge or contaminated condensate into the groundwater.

18.07.02 Location: Where the premises are partially outside of the Aquifer Protection District, potential pollution sources such as on-site waste disposal systems shall be located outside the District to the extent feasible.

18.07.03 Disposal: Where any toxic or hazardous wastes exist or will exist in quantities greater than those associated with normal household use the applicant must demonstrate the availability and feasibility of disposal methods in conformance with all State and Federal laws.

#### 18.07.04

Drainage: All runoff from impervious surfaces shall be recharged on the site and diverted towards areas covered with vegetation for surface infiltration to the extent possible. Dry wells shall be used only where other methods are not feasible, and shall be preceded by oil, grease, and sediment traps to facilitate removal of contaminants.

18.07.05 Monitoring: Periodic monitoring may be required by the Planning Board, including sampling of wastewater disposed to on-site systems or dry wells and sampling from groundwater monitoring wells to be located and constructed as specified in the Special Permit with reports to be submitted to the Planning Board and the Conservation Commission. The costs of monitoring, including sampling and analysis, shall be borne by the owner or applicant.

18.07.06 Erosion and Sedimentation Control: All clearing and earth moving operations shall occur only while erosion and sedimentation control measures, approved by the Planning Board, are in place. Such control measures shall remain in place until the Building Inspector determines that the danger of erosion or sedimentation no longer exists. Hay bales shall only be used as a sole measure where it has been determined that the danger of soil erosion or sedimentation is minimal.

#### 18.08 SEVERABILITY

A determination that any specific portion of this Section XVIII is invalid shall not render any other part thereof invalid.